

ABSTRACT

A method for avoiding copper extrusion during a damascene process is disclosed. A semiconductor wafer including a substrate with at least one copper conductive wire on the substrate is provided. A dielectric layer on the copper conductive wire is formed. A damascene structure having an opening exposing a portion of the copper conductive wire is formed using the dielectric layer. A degassing process to make gas escape from the dielectric layer is performed. A barrier layer on portions of the exposed surface of the copper conductive wire and the damascene structure of the dielectric layer is formed. A conductive layer on the barrier layer is formed.